

REMARKS

Applicant intends this response to be a complete response to the Examiner's 17 July 2006 Non-Final Office Action. Applicant has labeled the paragraphs in his response to correspond to the paragraph labeling in the Office Action for the convenience of the Examiner.

Preliminary Comments

Applicant has added new claims 25-28. Claims 25-27 are a different structure of claim 1. Claim 28 is a energy extraction claim based on the condensation unit of this invention.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement filed May 12, 2004 has only been partially considered because copies of the Japanese and non-patent literature have not been supplied to the office. The supplied CD-ROM only includes US Patents.

Applicant formally withdraws this Japanese reference. We have been unable to determine what this reference is although it is cited in various Kalina patents. Applicant is submitting a supplemental IDS and requests consideration of these references.

Double Patenting

2. **Claims 10-16** stand objected to under 37 CFR 1.75 as being a substantial duplicate of claims 2-8.

The Examiner contends:

When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k). It appears that claims 10-16 maybe amended to depend from claim 9 instead of claim 1 to overcome this objection.

Applicant obviously forgot to change the dependency on claim 10-16 from claim 1 to claim 9. Applicant has amended claims 10-16 to change their dependency to claim 9. Applicant, therefore, respectfully requests withdrawal of this objection.

Claim Objections

3. **Claims 17-24** stand objected to under 37 CFR 1.75(c) as being in improper form.

The Examiner contends:

A multiple dependent claim must refer to other claims in the alternative only (by stating "any one of claims 1-16"). See MPEP § 608.01(n). Accordingly, the claims have not been further treated on the merits. Claims 18-20 and 22-24 are objected to for depending from objected claims 17 and 21. Note that if claims 17 and 21 are correctly amended, claims 22-24 would be rejected under 35 USC 112, second paragraph because each of claims 22-24 recites both "a third mixed stream" and "a third heat exchanger," but is unclear whether the phrases refer to the third mixed stream and the third heat exchanger recited in claim 21.

Applicant has amended claims 17 and 21 to eliminate the first step of the method removing the need to refer to the apparatuses of claims 1-16 as the needed elements are disclosed in the method steps. Applicant has also amended the claims so that the claims are internally consistent with the method being claimed. Applicant, therefore, respectfully requests withdrawal of this objection. Applicant has also made a number of amendments to claims 17-24 to corrected obvious typographical errors, grammatical errors or errors in reference. Applicant also realized that paragraph 37 had several miss identified stream (did not agree with Figure 2) and Applicant corrected these incorrect references. None of the amendments to claims 17-24 except for the deletion of the first step were prompted by the Examiner's rejection. Moreover, the deletions of the first step in claims 17 and 21 are not a narrow amendment as it obviously expanded the scope of the claims.

Claim Rejections - 35 USC § 102

5. **Claims 1, 2, 8-10 and 16** stand rejected under 35 U.S.C. 102(b) as being anticipated by Politte et al. (4,183,225).

The Examiner contends:

6. Politte et al. '225 teaches a system for treating a mixed refrigerant, comprising condensing the mixture in heat exchangers (4,6), splitting the mixture at two points downstream of the first heat exchanger (4), mixing the split streams at several points, and scrubbing the mixture in a phase separator (13) (see figures, col. 1, lines 14-18, col. 2, lines 7-21).

Applicant has amended claims 1 and 9 (the independent claims) to clarify the invention so that it is understood that a gaseous multi-component feed stream is fed to the apparatus resulting in a fully condensed multi-component output stream. Applicant also clarified that the scrubber, mixers and splitters are configured to produce partially condensed stream for each heat exchange stage, where the partially condensed or mixed stream are derived from the feed stream and have

parameters adapted to increase the heat transfer coefficient of each of the heat exchange stages. Each heat exchange stage is further adapted to fully condense its partially condensed or mixed streams into fully condensed streams, with the last heat exchange stage producing the fully condensed multi-component output stream.

Politte does not produce heat exchange stage streams that are derived from a vapor feed stream (Politte does use multi-component fluids) produced by the scrubber, the mixers and splitters, where the heat exchange stage stream are partially condensed or mixed liquid/vapor streams have parameters adapted to increase the heat exchange coefficients of the heat exchanger stages. In fact, in Politte, the heat exchangers condense the same stream or a portion of the same stream – in Figure 1 of Politte, the stream is split before entering the second heat exchanger. The phase separator 13 of Politte is not a scrubber column, but is "where it [the liquid refrigerant] is flashed to substantially the evaporator inlet pressure." Politte at Col. 4, ll. 39-40.

Applicant has added new claims 25-28, which are clearly distinguished over Politte.

Because Politte does not disclose producing different partially condensed stream for each heat exchange stage and does not disclose a scrubber, Politte cannot anticipate **Claims 1, 2, 8-10 and 16** based on the amendments to independent claims 1 and 9. Applicant, therefore, respectfully requests withdrawal of this 102(b) rejection.

Applicants does not believe that the present amendments are narrowing amendments as the amendments simply clarify the interrelationship of the components. The Politte reference does not include any of the essential elements of the present apparatus and Politte does not perform any of the essential steps of the present invention.

Claim Rejections - 35 USC § 103

8. **Claims 3-7 and 11-15** stand rejected under 35 U.S.C. 103(a) as being unpatentable over Politte et al. '225.

The Examiner contends:

9. Politte et al. '225 disclose all of the limitations of the claims except that there are 2, 3 or 4 heat exchangers and that there are two scrubbers. It would have been obvious to provide additional scrubbing or heat exchange stages to achieve more complete or efficient condensing based on the physical properties of the raw fluid stream entering the system and the desired level of condensation. It is submitted that the multiplying of a structure to achieve an improvement in its desired effect is an obvious modification, see *St. Regis Paper Company v. Bemis Company, Inc.*, 193 USPQ 8, 10.

Applicant reasserts his arguments set forth above.

Because Politte does not disclose, teach or suggest producing different partially condensed or mixed streams for each heat exchange stage and does not disclose, teach or suggest a scrubber, Politte cannot render **Claims 3-7 and 11-15** obvious based on the amendments to independent claims 1 and 9. Applicant, therefore, respectfully requests withdrawal of this 103 rejection.

Applicants does not believe that the present amendments are narrowing amendments as the amendments simply clarify the interrelationship of the components.

Having fully responded to the Examiner's Non-Final Office Action, Applicant respectfully urges that is application be passed onto allowance.

The Commissioner is authorized to charge the additional claim charges to deposit account 501518.

If it would be of assistance in resolving any issues in this application, the Examiner is kindly invited to contact applicant's attorney Robert W. Strozier at 713.977.7000

Date: **October 17, 2006**

Respectfully submitted,



Robert W. Strozier, Reg. No. 34,024